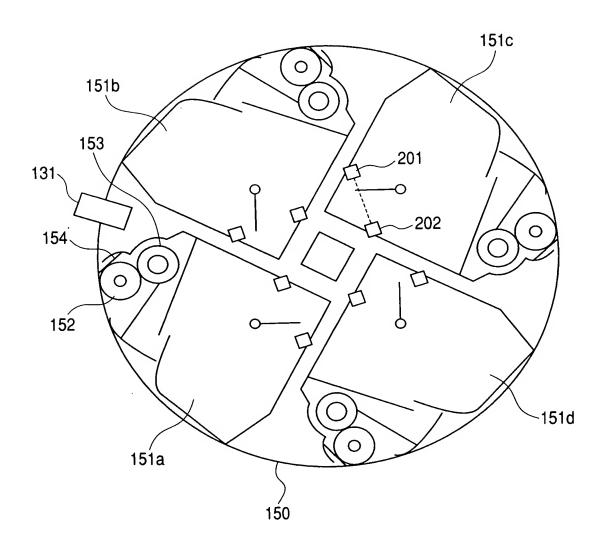
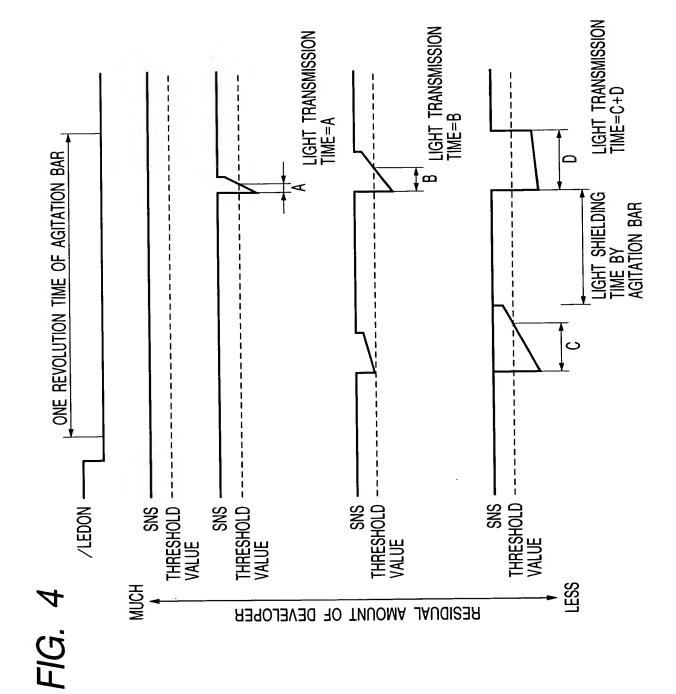


FIG. 3





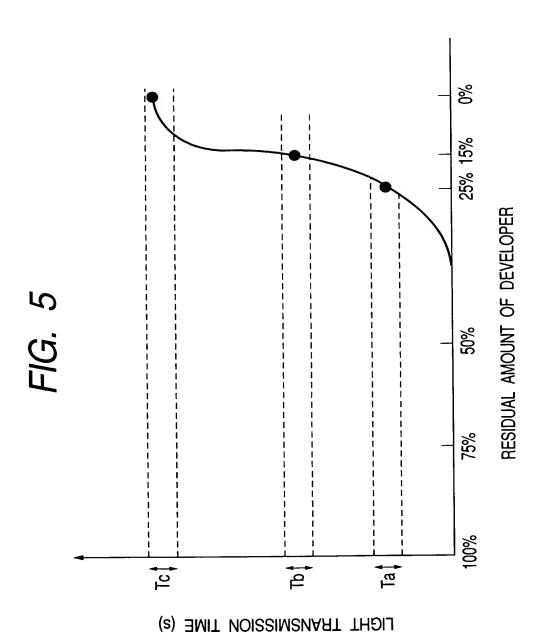
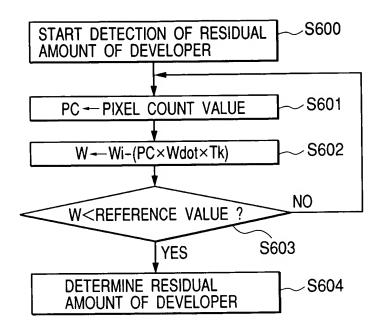
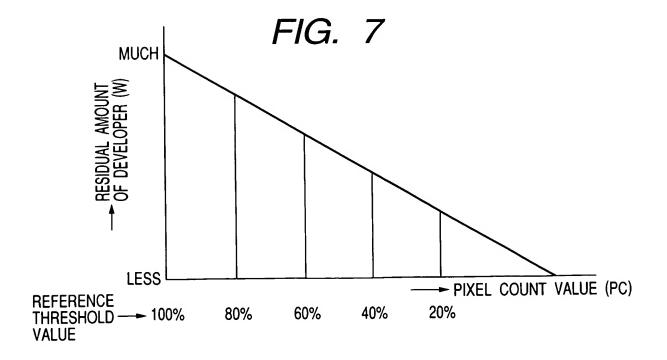


FIG. 6





.S808 **S802 S805 S**801 8806 읟 XES START DETECTING AND JUDGING RESIDUAL AMOUNT OF DEVELOPER \$804 **S803** M=RESIDUAL AMOUNT LEVEL OF DETECTING MEANS 1 N=RESIDUAL AMOUNT LEVEL OF DETECTING MEANS 2 RESIDUAL AMOUNT LEVEL=N FIG. 8B \Box 工 YES ပ M=B? വ് M=B & N=A, B, M=E PRESUMPTION METHOD OF DEVELOPER AMOUNT **DETECTION** 10% %08 %08 40% % % 20% % % % FIG. 8A KEEP LEVEL B BECAUSE OF RESIDUAL DETECTION METHOD OF DEVELOPER AMOUNT AMOUNT DETECTION INABILITY OPTICAL 30% 90% 25% 20% 15% 1% 2% % RESIDUAL AMOUNT LEVEL G 工 ட S ш \forall $\mathbf{\omega}$

.

S807

RESIDUAL AMOUNT LEVEL=D

RESIDUAL AMOUNT LEVEL=M

RESIDUAL AMOUNT LEVEL=C

RESIDUAL AMOUNT LEVEL=M

.S908

FIG. 9A

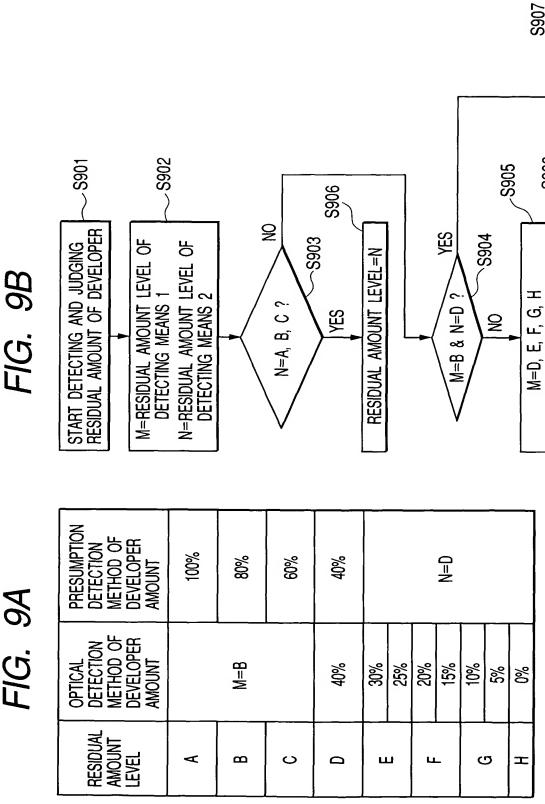
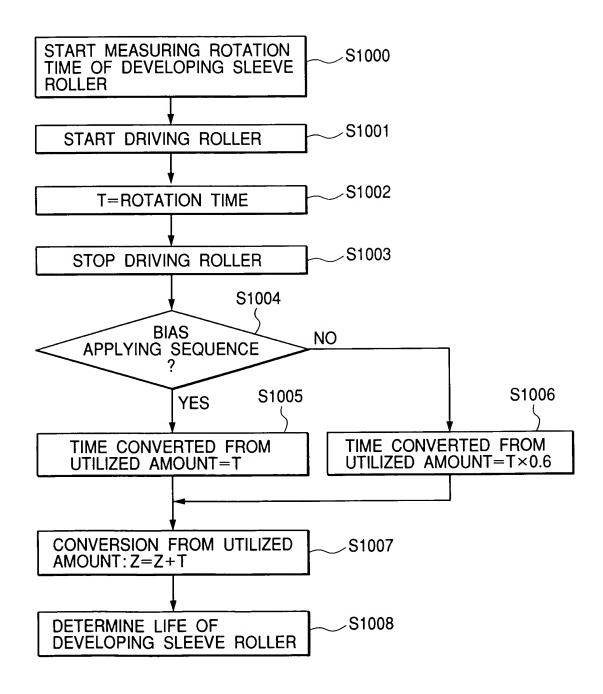
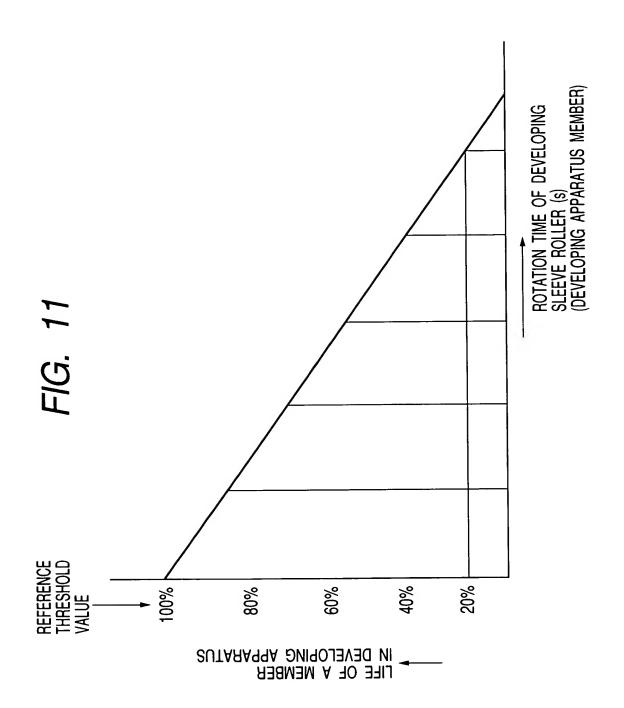


FIG. 10





S1207

LIFE TIME LEVEL=D

LIFE TIME LEVEL=M

S1208 -S1205 S1201 _S1202 \S1204 9 ~S1203 ΥES START DETECTING AND JUDGING DEVELOPING APPARATUS LIFE M=RESIDUAL AMOUNT LEVEL OF DETECTING MEANS 1 N=RESIDUAL AMOUNT LEVEL OF DETECTING MEANS 3 RESIDUAL AMOUNT LEVEL=N FIG. 12B \bigcirc 工 YES M=B? ග් M=B N=A, B, ட M=E UTILIZED AMOUNT DETECTING METHOD OF DEVELOPER BEARING BODY 100% 10% % % % 60 80 40% 30% 20% % FIG. 12A KEEP LEVEL B BECAUSE OF RESIDUAL AMOUNT DETECTION INABILITY METHOD OF DEVELOPER AMOUNT DETECTION 25% 15% 10% 30% 2% % RESIDUAL AMOUNT LEVEL ட G エ ш മ ပ 0 ⋖

S1301

-S1302

9 ~S1303 **S1304** XES START DETECTING AND JUDGING DEVELOPING APPARATUS LIFE M=RESIDUAL AMOUNT LEVEL OF DETECTING MEANS 1 N=RESIDUAL AMOUNT LEVEL OF DETECTING MEANS 3 RESIDUAL AMOUNT LEVEL=N FIG. 13B エ N=A, B, C? т, Q M=B & N=D YES ய் M=D, JTILIZED AMOUNT Detecting Method of Developer Bearing body 100% Q=N 88 % 40% FIG. 13A DETECTION METHOD OF DEVELOPER AMOUNT OPTICAL M=B 20% 10% 40% 30% 25% 15% 2% % RESIDUAL AMOUNT LEVEL ပ × $\mathbf{\alpha}$ ш ш ${\mathfrak O}$ I

S1307

S1308

S1305

LIFE TIME LEVEL=C

LIFE TIME LEVEL=M

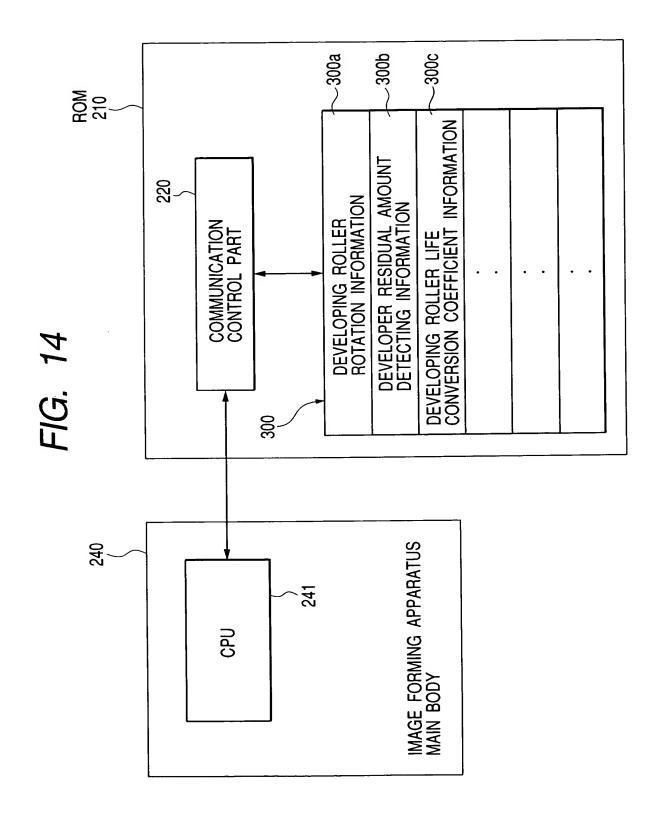


FIG. 15

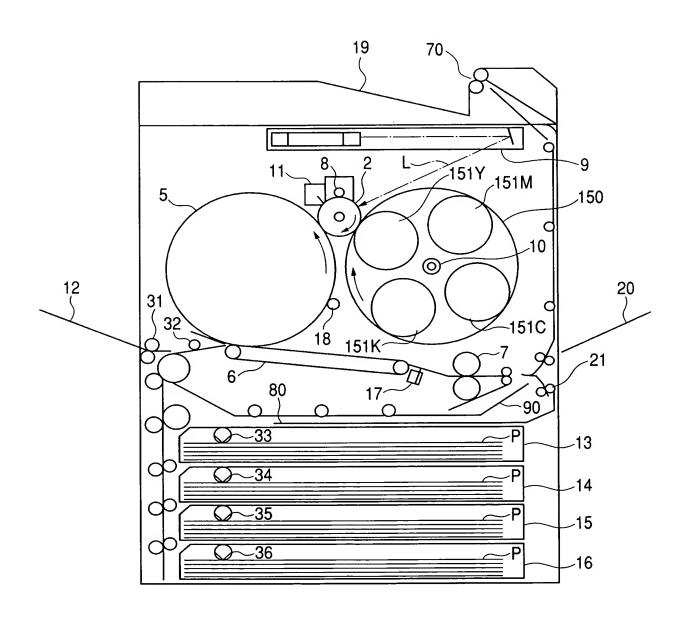


FIG. 16

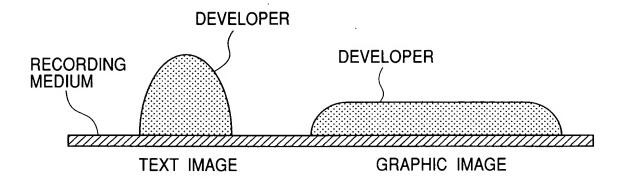


FIG. 17

